



NETWORKED STORAGE

Integrator supports text message voting for TV programs with a networked storage solution, p. 6.



STORAGE BUYER'S GUIDE

Find vendors of RAID, SAN, NAS, software, optical, and tape to enhance your storage system, p. 7.

Business Solutions

FOR Mass Storage

Fly First Class With Data Backup Consolidation

Storage systems integrator HONCAD Corporation leverages its local presence and expertise at **centralizing backup operations** to land a **\$40,000 airline account**, p. 2.

Jim Hogarty (left), president, and Scott Reynolds, chief technology officer, HONCAD Corporation



Fly First Class With Data Backup Consolidation

▲ Storage systems integrator HONCAD Corporation leveraged its local presence and expertise at centralizing backup operations to secure a \$40,000 airline contract.

by Ken Congdon

Potpourri smells great, and it's a fun category on "Jeopardy," but using this concept to design an organization's backup and recovery system can lead to serious problems. HONCAD Corporation (Honolulu) has seen the headaches a jumbled backup system can cause and knows how to ease the pain.

In February 2002, the enterprise storage systems integrator was approached by an airline that was fed up with the high maintenance, slow performance, and unreliability of its backup system. The system was composed of several different backup products (hardware and software) for use on the Windows and UNIX platforms on which the airline operated. The airline had a limited number of engineers charged with managing and revising these different products. Because of the number of varying components, the engineers were unable to gain technical expertise on all parts of the system. They learned enough about all elements of the system to make it work, but did not have the time to gain a deep understanding in each product.

Furthermore, the backup system was decentralized — each host was hooked to a local tape drive. This resulted in a large amount of media that need-

ed to be rotated between the airline and an off-site vault. At the time, airline engineers were manually performing this task. The manpower required to manage the physical tape was substantial, and airline engineers were devoting the bulk of their days to swapping tapes in and out of drives. The slow speed of backups was also an issue. The airline was starting to exceed its backup window (the length of time the backup operation is running) and was forced to abort backups. With data now at risk, the airline was determined to upgrade its backup system and turned to HONCAD for assistance.

“Having a local company to rely on for ongoing support and enhancement was very valuable to the airline’s management and the key reason we won the account.”

Jim Hogarty, HONCAD Corporation

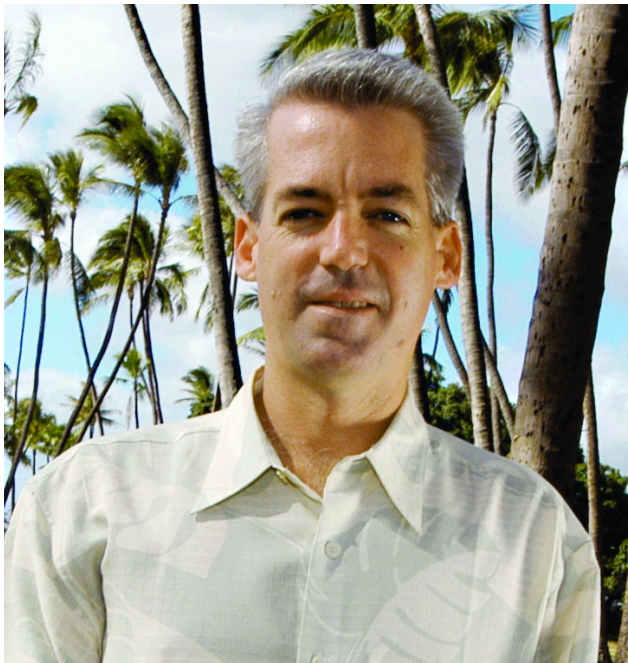
When A Local Presence Becomes A Priority

HONCAD was not the only storage systems integrator the airline considered, but it did have a distinct advantage over the competition — it was local. The airline's main operations center was in Honolulu, where HONCAD is based. Having a local presence is usually considered when making a buying decision of this nature, but when located on an island, it becomes a priority. "Think about our geography for a moment," says Jim Hogarty, president of HONCAD. "We are smack in the middle of the largest ocean on the planet. To use a company based in the conti-



mental United States would require a team to be flown in to install the system and provide training. This can add to the cost of the solution. Plus, support would be delivered remotely. Having a local company to rely on for ongoing support and enhancement was very valuable to the airline's management and the key reason we won the account." Not only is HONCAD based in Honolulu, but its business partner, Computer Associates (CA) (Islandia, NY), has a local office on the island as well. This allowed the two organizations to work closely with one another to perform a storage assessment and deliver a tailored solution to the airline.

Local support was also important because budgetary constraints prevented the airline from implementing the entire solution immediately. The selected provider would need to be on-site to phase in the complete solution over time. A local company could satisfy this demand more quickly and easily than a remote provider.



"When making changes to a storage system within a live production environment ... everything must be planned, from testing to cutover. ..."

Jim Hogarty, HONCAD Corporation

Getting The Network Backup Ready

HONCAD's proposed solution consisted of a StorageTek L40 automated tape library, 4 LVD (low voltage differential)/LTO (linear tape-open) drives, and CA BrightStor enterprise backup software. The automated tape library would allow the airline to consolidate all tape backups to one central location, reducing the amount of media the customer needed to manage. It would also automate the media vaulting process. A robotic tape arm would automatically grab a tape from a slot, insert it into one of multiple drives, perform the backup process, and run a status report for the engineers. CA BrightStor software managed the system and supported the airline's heterogeneous (Windows and UNIX) environment, allowing for complete consolidation of backups.

The solution was a fit for the airline, but implementing the new components was not a simple plug and play procedure. The network was not ready for centralized backup from day one. The airline had several servers containing 50 to 60 GB of data or more sitting on 100BaseT (100 megabits per second) network connections. These connections were too slow for the backup requirements and would cause tape drives to back-hitch. Back-hitching occurs when the flow of data is interrupted and a tape drive must stop, rewind, and reposition the tape to the end of the data. This process consumes valuable job time, accelerates media wear, and compromises the safety of the data. To prevent this from occurring, HONCAD had to ensure data could be backed up quickly. "To keep the tape drives streaming, we upgraded key system connections from 100BaseT to Gigabit Ethernet [1,000 megabits per second]," says Scott Reynolds, chief technology officer for HONCAD. "In addition, we installed an HP backup server that had a large disk-staging cache so data could be stored to disks first as opposed to tape." These upgrades improved the performance of the network and allowed it to support the centralization of backups.

Integration With A Live Production System

Another challenge HONCAD faced when implementing the new backup solution was installing it in a live production environment. The airline was a functioning business. Servers were running, supporting customer applications such as travel reservations, ticketing, and reward miles. HONCAD could not simply



shut everything down and transition all data to the new backup system. This would result in massive data loss and many angry customers.

“When making changes to a storage system within a live production environment, you have to be extremely careful,” says Hogarty. “Everything must be planned, from testing to cutover. You usually have to work at night or at off hours to test and reboot.” HONCAD scheduled planned downtimes for testing and used this time to ensure the backup would run seamlessly when transitioning from the existing backup management software to CA BrightStor. HONCAD added system components one at a time to ensure everything worked, without interrupting the airline’s data flow.

Next Destination: UNIX Consolidation And SAN-Attached

By June 2003, the airline’s Windows environment was completely consolidated and backed up by the automated tape library managed by CA BrightStor. HONCAD implemented this phase of the solution in two weeks at a cost of \$40,000. The airline is already benefiting from the self-sufficiency and increased performance of this centralized backup system. System consolidation has allowed airline engineers to focus on one backup package, giving them time to gain the technical expertise they have long desired. Also, automation of the tape rotation process has reduced the amount of manpower necessary to manage physical media. Airline engineers now devote their time to other vital system applications rather than scrambling around changing tapes. Finally, the increased performance of the network has eliminated the airline’s backup window issues. The new system keeps the airline’s applications operational and has put an end to aborted backups.

The airline can look forward to future benefits from the HONCAD solution as well. As mentioned earlier, the entire solution could not be implemented all at once due to the client’s budgetary constraints. Keeping this in mind, HONCAD selected products that could scale to fit future system enhancements. When the airline is ready, its UNIX backups will be centralized to the same tape library. CA BrightStor is compatible with both Windows and UNIX platforms, making this transition possible. Furthermore, HONCAD ensured it selected a tape library that was compatible with the airline’s existing SAN (storage area network)



“As a result [of using a SAN], the airline will have an even smaller backup window. Plus, backup traffic will be taken completely off the LAN. ...”

Scott Reynolds, HONCAD Corporation

bridges. The airline already had a SAN in place to move data between specific servers. Eventually, the tape library will be upgraded and attached to the SAN, and the backup function will operate in this environment. “With SAN, Fibre Channel links are utilized. This is a high-speed, low-latency, high-throughput technology,” says Reynolds. “As a result, the airline will have an even smaller backup window. Plus, backup traffic will be taken completely off the LAN and put on the SAN where it belongs.”

Removing backup activity from the LAN will allow the network to focus on managing communications, improving the speed and performance of these applications. These enhancements to the airline’s backup system are anticipated for the first quarter of 2004. □

For More Information

Computer Associates: www.ca.com
HONCAD Corporation: www.honcad.com

